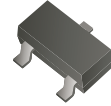


SM712-HF

RoHS Device
Halogen Free



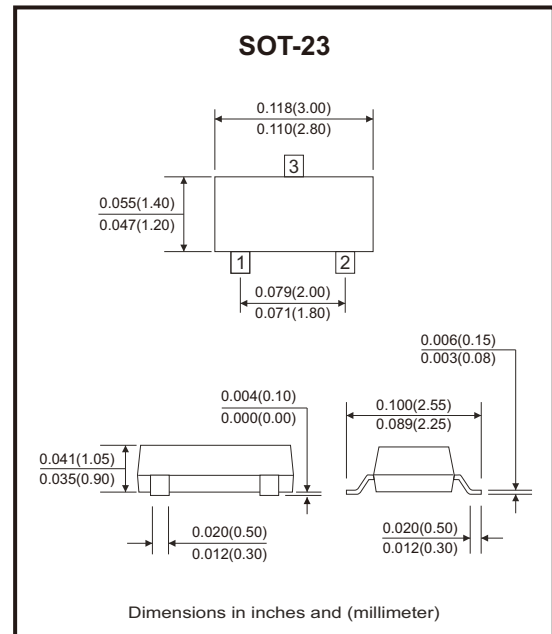
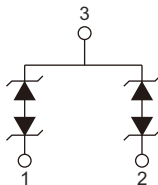
Features

- Low clamping voltage.
- Low leakage
- Operating voltage: 7V or 12V .

Mechanical data

- Case: SOT-23, molded plastic.
- Mounting position: Any.

Circuit Diagram



Maximum Rating (at TA=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
IEC 61000-4-2(ESD)air (Note 1)	V _{ESD}	±30	kV
IEC 61000-4-2(ESD)contact (Note 1)	V _{ESD}	±30	kV
Peak pulse power (Note 2)	P _{PP}	325	W
Peak pulse current (Note 2)	I _{PP}	13	A
Operating temperature range	T _J	-55 ~ +125	°C
Storage temperature range	T _{STG}	-55 ~ +150	°C

Notes : 1. Device stressed with ten non-repetitive ESD pulses.

2. Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC 61000-4-5.

Electrical Characteristics (at T_A=25°C unless otherwise noted)

Parameter	Conditions		Symbol	Min	Typ	Max	Unit
Reverse standoff voltage (Note 1)	Pin1 to Pin3 and Pin2 to Pin3		V _{RWM}			12	V
	Pin3 to Pin1 and Pin3 to Pin2		V _{RWM}			7	V
Reverse leakage current	Pin1 to Pin3 and Pin2 to Pin3	V _R = V _{RWM}	I _R			0.5	μA
	Pin3 to Pin1 and Pin3 to Pin2	V _R = V _{RWM}	I _R			0.5	μA
Breakdown voltage	Pin1 to Pin3 and Pin2 to Pin3	I _T = 1mA	V _(BR)	13.3			V
	Pin3 to Pin1 and Pin3 to Pin2	I _T = 1mA	V _(BR)	7.5			V
Clamping voltage (Note 2)	Pin1 to Pin3 and Pin2 to Pin3	I _{PP} = 5A	V _C			20	V
	Pin3 to Pin1 and Pin3 to Pin2	I _{PP} = 5A	V _C			14	V
Clamping voltage (Note 2)	Pin1 to Pin3 and Pin2 to Pin3	I _{PP} = 13A	V _C			25	V
	Pin3 to Pin1 and Pin3 to Pin2	I _{PP} = 13A	V _C			16	V
Junction capacitance	Pin1 to Pin3 and Pin2 to Pin3	V _R = 0V, f = 1MHz	C _J			50	pF
	Pin3 to Pin1 and Pin3 to Pin2	V _R = 0V, f = 1MHz	C _J			50	pF
Junction capacitance	Pin1 to Pin3 and Pin2 to Pin3	V _R = V _{RWM} , f = 1MHz	C _J			30	pF
	Pin3 to Pin1 and Pin3 to Pin2	V _R = V _{RWM} , f = 1MHz	C _J			30	pF

Notes : 1. Other voltage available upon request.

2. Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC 61000-4-5.

Typical Rating and Characteristic Curves (SM712-HF)

Fig.1 - Junction Capacitance vs. Reverse Voltage

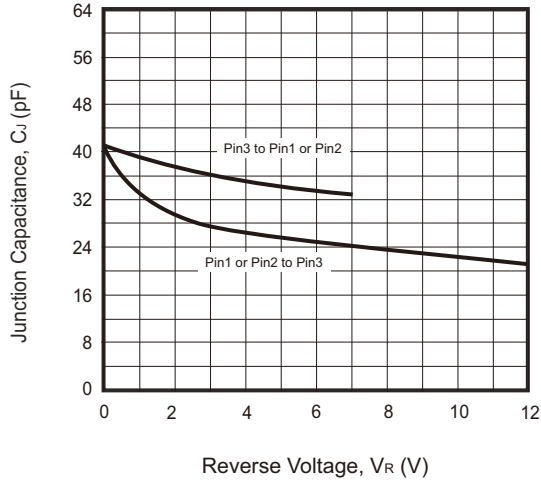


Fig.2 - Peak Pulse Power vs. Pulse Time

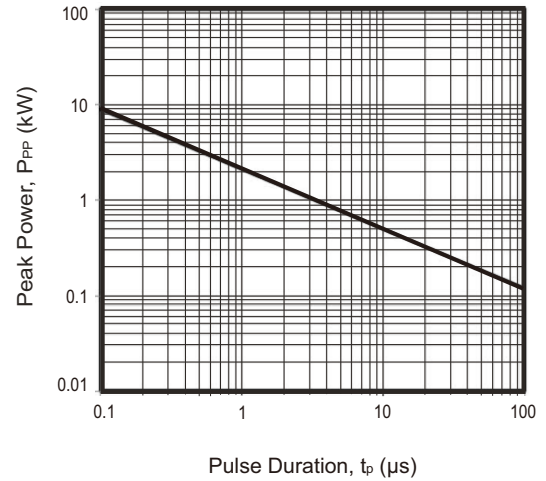


Fig.3 - Clamping Voltage vs. Peak Pulse Current

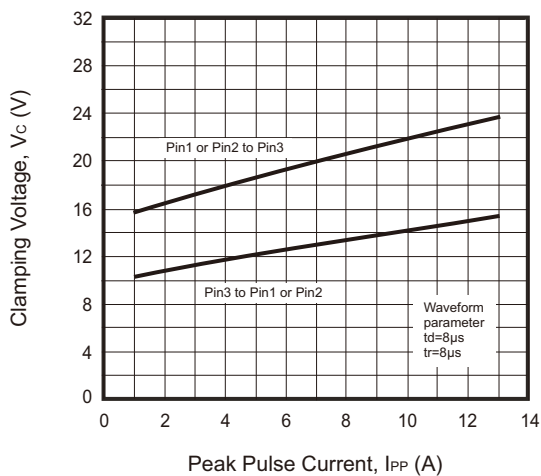


Fig.4 - Power Derating Curve

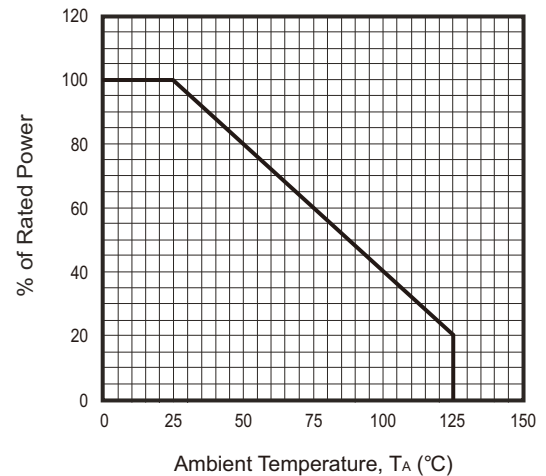


Fig.5 - 8 x 20 μs Pulse Waveform

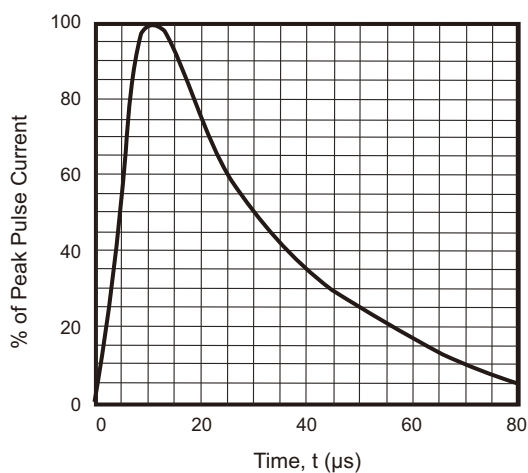
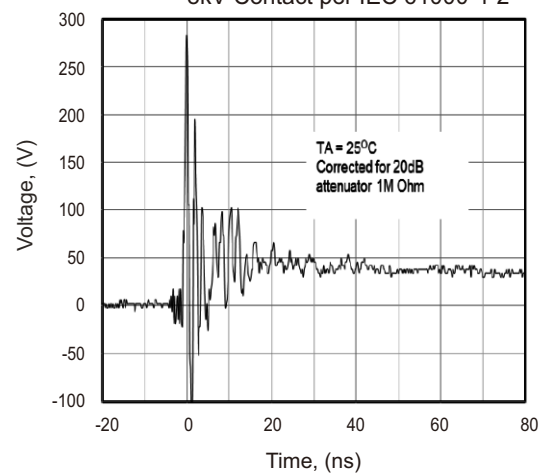
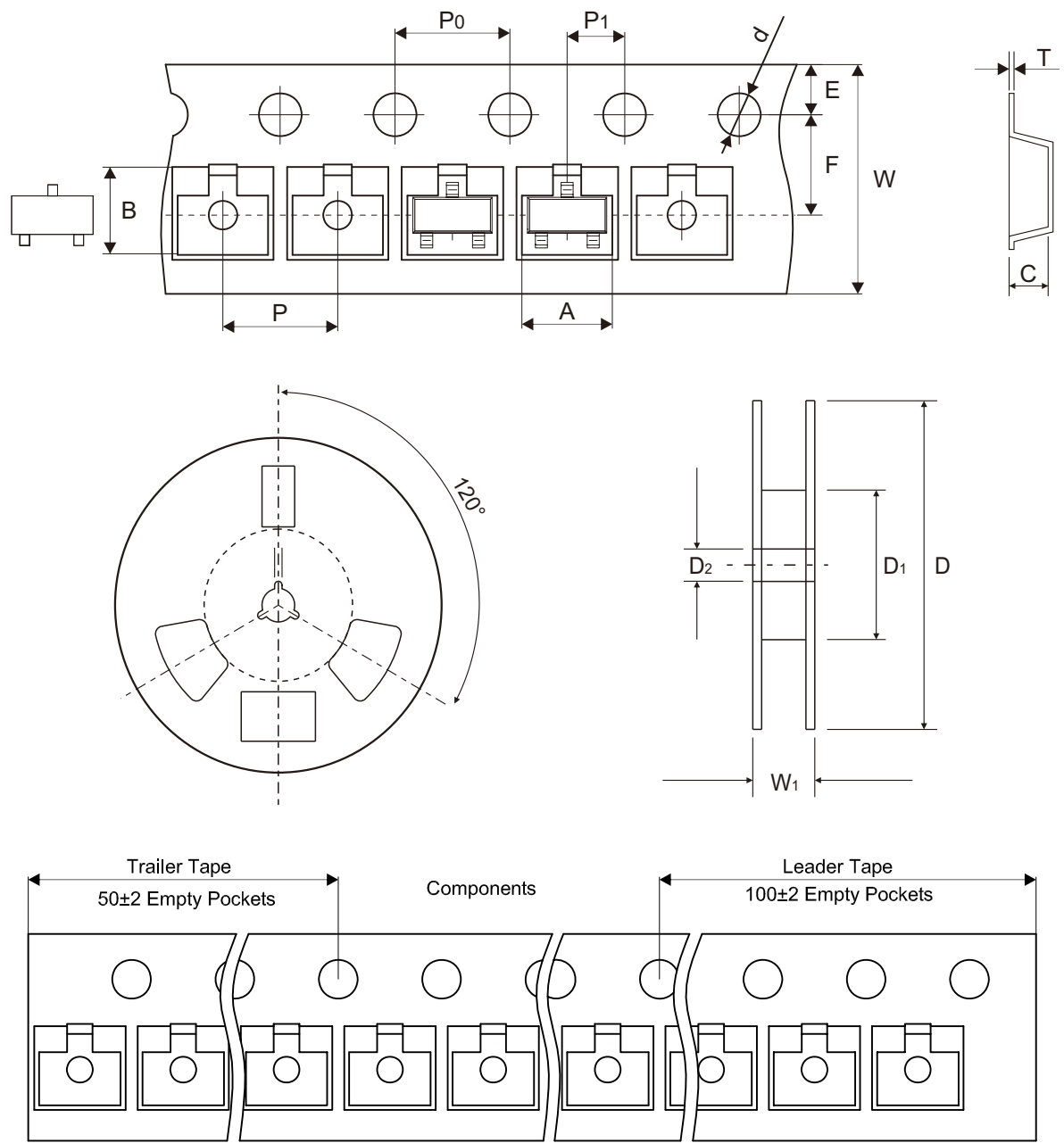


Fig.6 - ESD Clamping Voltage
8kV Contact per IEC 61000-4-2



Reel Taping Specification

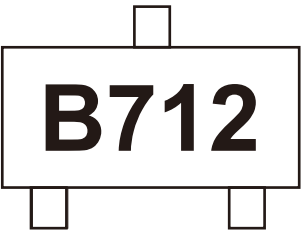


SOT-23	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	3.15 ± 0.10	2.77 ± 0.10	1.22 ± 0.10	1.50 + 0.10 - 0.00	178.00 ± 2.00	54.40 ± 1.00	13.00 ± 1.00
	(inch)	0.124 ± 0.004	0.109 ± 0.004	0.048 ± 0.004	0.059 + 0.004 - 0.000	7.008 ± 0.079	2.142 ± 0.039	0.512 ± 0.039

SOT-23	SYMBOL	E	F	P	P0	P1	T	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.20 ± 0.02	8.00 + 0.30 - 0.10	12.30 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.008 ± 0.001	0.315 + 0.012 - 0.004	0.484 ± 0.039

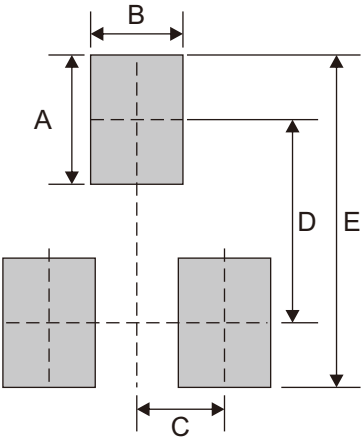
Marking Code

Part Number	Marking Code
SM712-HF	B712



Suggested P.C.B. PAD Layout

SIZE	SOT-23	
	(mm)	(inch)
A	1.40	0.055
B	1.00	0.039
C	0.95	0.037
D	2.20	0.087
E	3.60	0.142



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-23	3,000	7